

INTERNATIONAL SEARCH REPORT

International Application No
PCT/ZA2004/000007

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B01J23/28 B01J23/30 C10G29/20 C07C7/148 C07C67/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B01J C10G C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 415 480 A (MURRELL LAWRENCE L ET AL) 15 November 1983 (1983-11-15) claim 1 examples 1,2; table 1	1-5
X	US 4 560 797 A (ARMOR JOHN N ET AL) 24 December 1985 (1985-12-24) example 1; tables 1,3	1-5
X	EP 0 319 065 A (SHELL INT RESEARCH) 7 June 1989 (1989-06-07) examples 1,2	1-5
X	US 3 846 288 A (CHUN S ET AL) 5 November 1974 (1974-11-05) the whole document	1,2, 4-14,18, 19,22-26
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

G document member of the same patent family

Date of the actual completion of the international search

2 June 2004

Date of mailing of the international search report

09/06/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Zuurdeeg, B

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 968 149 A (MORESCHINI LUCIANO ET AL) 6 July 1976 (1976-07-06) the whole document	1-5
A	DE 100 12 163 A (LINDE AG) 20 September 2001 (2001-09-20)	
A	WO 98/25876 A (SASOL CHEMICALS EUROP LTD ; VERMAAK ESTER JOHANNA (ZA); JAGER GEERT GU) 18 June 1998 (1998-06-18)	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/ZA2004/000007

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4415480	A	15-11-1983	NONE	
US 4560797	A	24-12-1985	US 4624939 A	25-11-1986
EP 0319065	A	07-06-1989	BR 8805979 A CA 1331376 C CN 1033246 A ,B DE 3867446 D1 EP 0319065 A1 JP 1164441 A JP 2905488 B2 US 4916102 A US 4940827 A	08-08-1989 09-08-1994 07-06-1989 13-02-1992 07-06-1989 28-06-1989 14-06-1999 10-04-1990 10-07-1990
US 3846288	A	05-11-1974	NONE	
US 3968149	A	06-07-1976	IT 1008392 B BE 826434 A1 DE 2509729 A1 ES 435338 A1 FR 2263222 A1 GB 1489834 A JP 50123618 A NL 7502517 A	10-11-1976 08-09-1975 11-09-1975 01-12-1976 03-10-1975 26-10-1977 29-09-1975 09-09-1975
DE 10012163	A	20-09-2001	DE 10012163 A1 ZA 200101977 A	20-09-2001 28-11-2001
WO 9825876	A	18-06-1998	AT 215926 T AU 721229 B2 AU 7846698 A BR 9713575 A CA 2274751 A1 DE 69711918 D1 DE 69711918 T2 EP 0944572 A1 WO 9825876 A1 ID 22495 A TW 474913 B ZA 9711058 A	15-04-2002 29-06-2000 03-07-1998 14-03-2000 18-06-1998 16-05-2002 22-08-2002 29-09-1999 18-06-1998 21-10-1999 01-02-2002 09-06-1999